

Title (en)

SELF-ASSEMBLING MOLECULAR PHOTO-DETECTOR DEVICE

Title (de)

SELBSTMONTIERENDE MOLEKULARLICHTDETEKTORVORRICHTUNG

Title (fr)

DISPOSITIF PHOTODÉTECTEUR MOLÉCULAIRE À ASSEMBLAGE AUTOMATIQUE

Publication

EP 2898530 A1 20150729 (EN)

Application

EP 13801772 A 20130923

Priority

- IT TO20120826 A 20120924
- IB 2013058776 W 20130923

Abstract (en)

[origin: WO2014045256A1] A photo-detector device is described including an active layer adapted to absorb an optical radiation and to generate in a corresponding way pairs of electrical charge carriers, comprised between a first and a second electrode layer including a respective electrically conductive material, at least one of which is a layer of optically transparent material, arranged to be connected to an external electrical signal processing circuit. The active layer includes a self-assembling monolayer of molecules comprising a donor group facing the first electrode layer and an acceptor group facing the second electrode layer, the molecules being adapted to assume a charge transfer state resulting from the absorption of the optical radiation, whereby the charge carriers generated reside separately on the donor group and on the acceptor group and are transferred therefrom to the adjacent electrode layers, in such a manner as to determine a flow of a detection electrical current in the signal processing circuit.

IPC 8 full level

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CPC (source: EP)

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